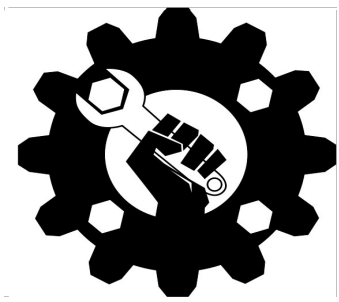


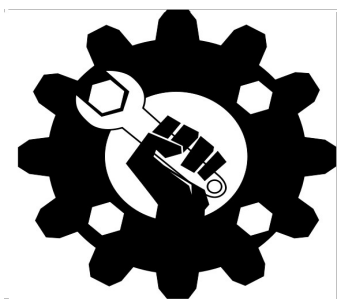
Makers Local 256:
Makers Learn: Basic Blueprint
Reading



Makers Local 256: Makers Learn: Basic Blueprint Reading

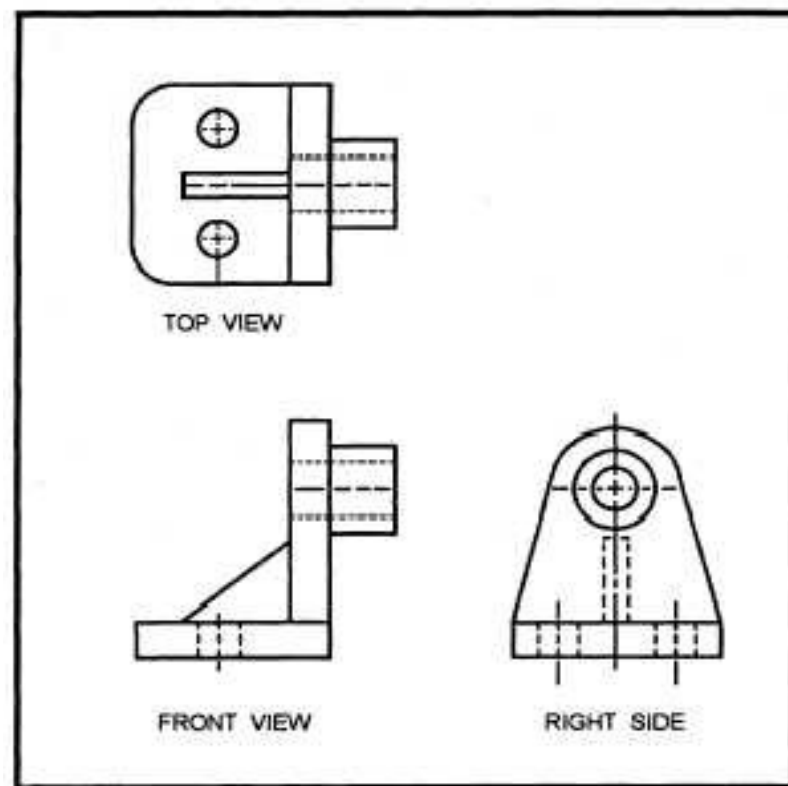
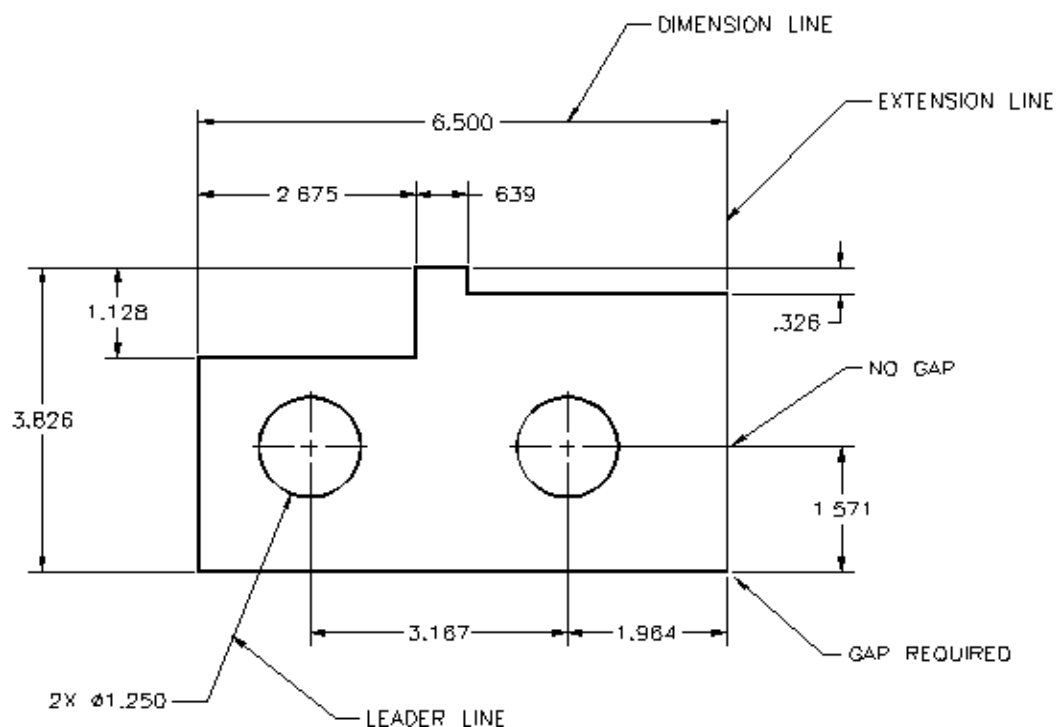
At the end of this course you should be able to:

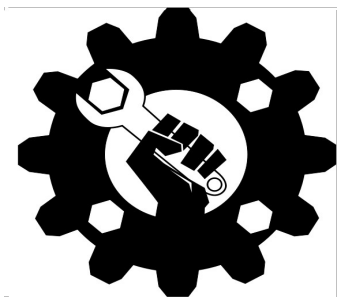
- Understand the basics of blueprints
- Know the basic views on the print
- Know the two types of view projection
- The types of lines used on prints
- Basic print structure
- Basic dimensions and tolerances



Makers Local 256: Makers Learn: Basic Blueprint Reading

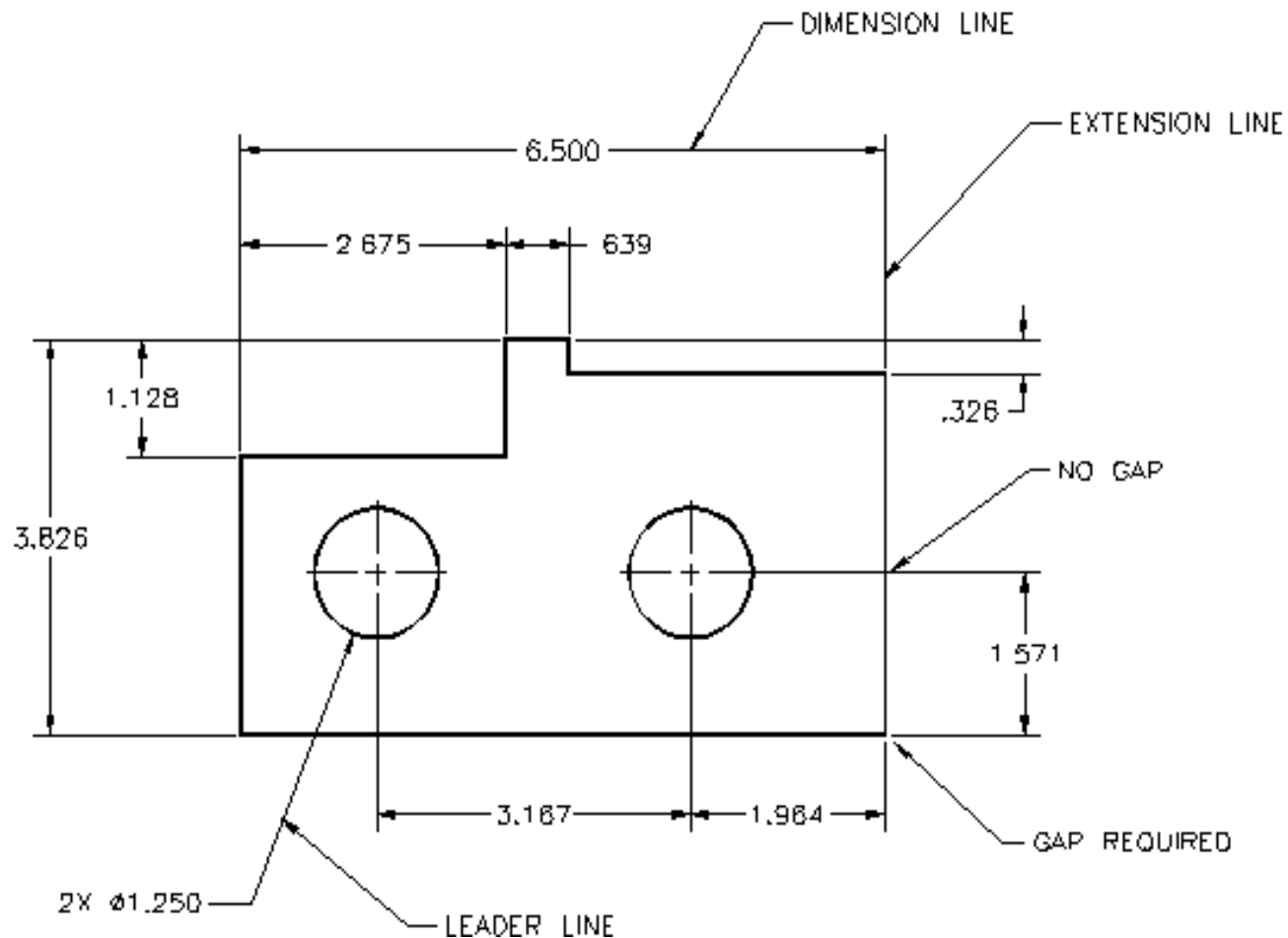
Standard Print Views

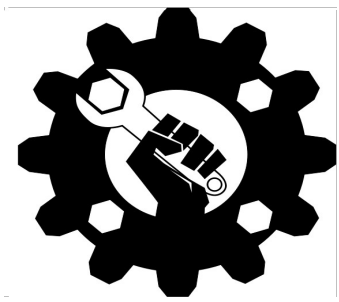




Makers Local 256: Makers Learn: Basic Blueprint Reading

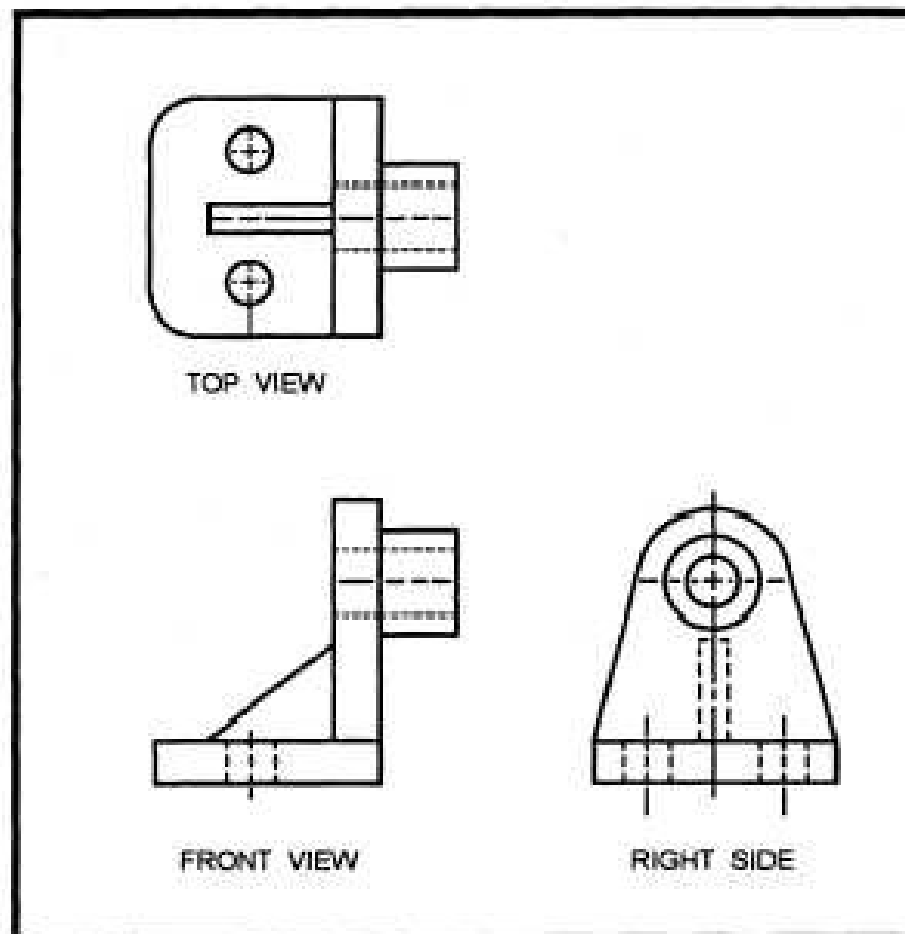
Single View Print

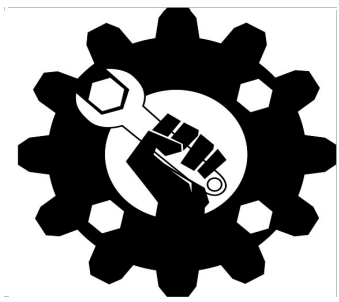




Makers Local 256: Makers Learn: Basic Blueprint Reading

Three View Print

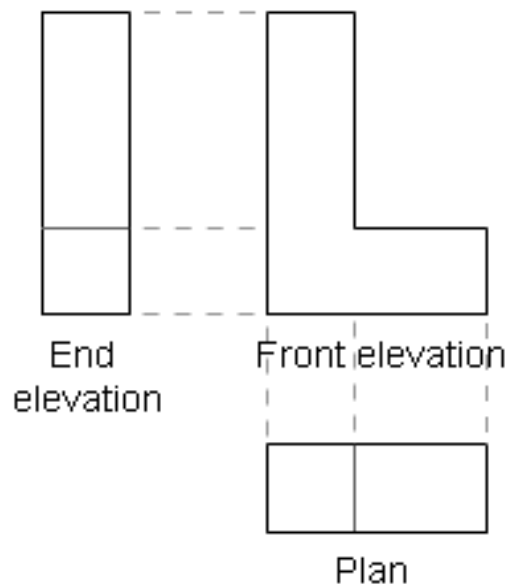




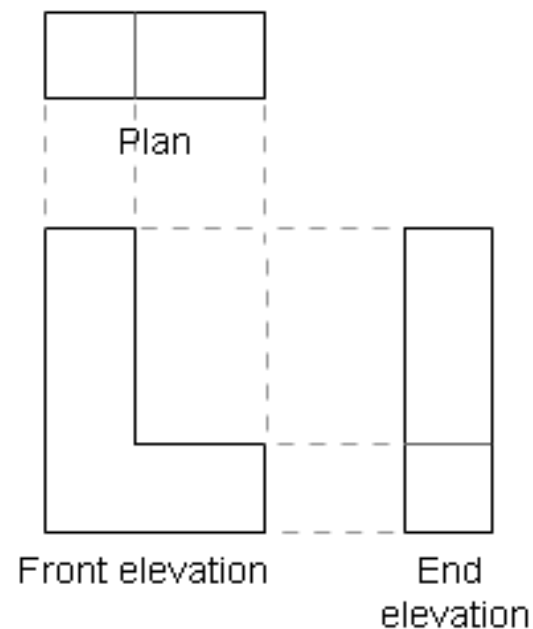
Makers Local 256: Makers Learn: Basic Blueprint Reading

Types of View Projections

Orthographic drawing

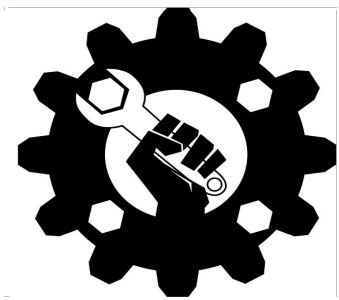


First angle projection



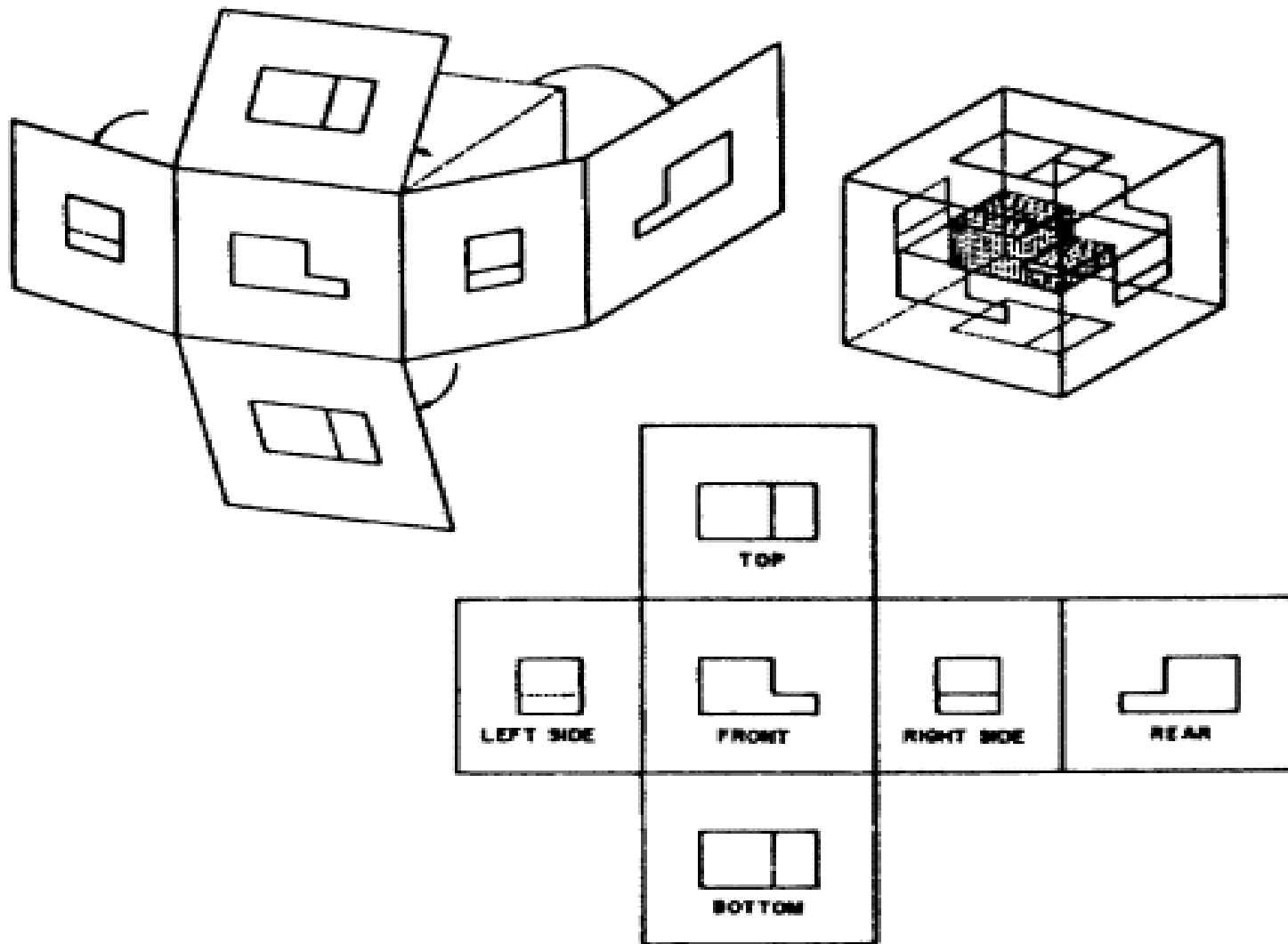
Third angle projection

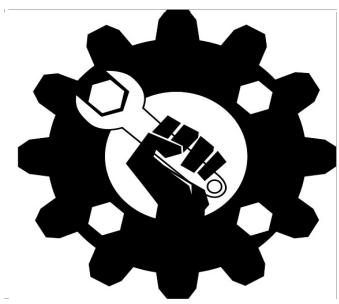




Makers Local 256: Makers Learn: Basic Blueprint Reading

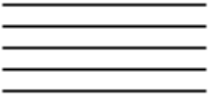



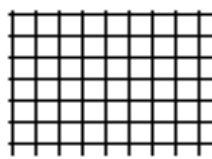
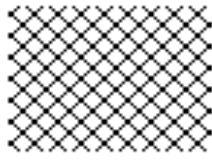
View Creation

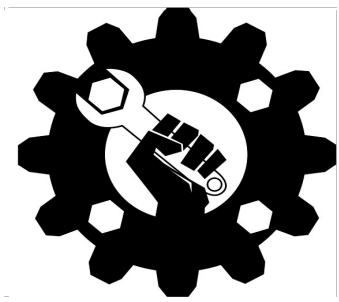




Makers Local 256: Makers Learn: Basic Blueprint Reading

Blueprint Line Types and Hatch Styles

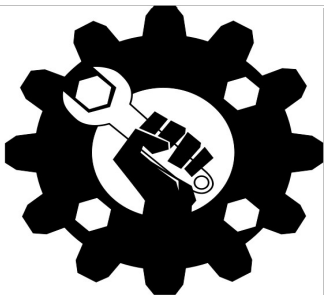
Part Outlines	Heavy		HORIZONTAL
Section Lines	Light		VERTICAL
Hidden Lines	Medium		FDIAGONAL
Center Lines	Light		BDIAGONAL
Dimension and Extension Lines	Light 3.000		CROSS
Cutting Plane	Heavy		DIAGCROSS
Break Lines	Heavy Light		



Makers Local 256:

Makers Learn: Basic Blueprint Reading

Basic Print Structure and Notation.



Makers Local 256: Makers Learn: Basic Blueprint Reading

CONTRACT NO. N/A		COMPANY NAME PCB DESIGN SCHOOL			
APPROVALS	DATE	WRL FABRICATION DRAWING PCB DESIGN SAMPLE			
DRAWN CLARK NEW	12/21/06				
CHECKED BRUCE WILHE	12/22/06				
ISSUED WAL JORDAN	12/22/06				
SIZE D		FSCM NO. 0425EPT	DWG. NO. PCB-D107		REV. A
SCALE FULL		SHEET 1 OF 2			

A

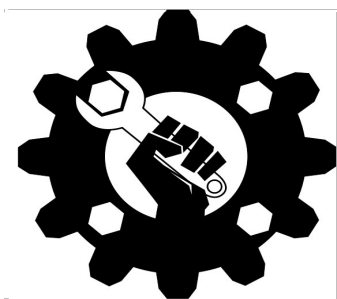
BILL OF MATERIAL					
ITEM NO.	DESCRIPTION	UNIT	ASSEMBLY OR FSN NO.	QUANTITIES	
				TROP	NORTH
1-1	LIGHTING MOUNT - RAYTRAC DWS DR 00214	EA	3014	1	1
1-2	POWER SW, 100A - RAYTRAC DWS DR 00010	EA	3047	1	1
1-3	RECEPTACLE SWT - RAYTRAC DWS DR 00000	EA	3010	1	1
1-4	SW, RECEPTACLE W/SLAMP FOR NONMETALLIC SHEATH WIRE	EA	3023-100-004	1	1
1-5	LAMP ELECTRIC, WEA BARE, 100W FROSTED, 200V, 100V	EA	3040-100-014	1	1
1-6	PLUGGY ATTACHMENT, 3 WIRE, 15 AMP, 120V	EA	3022-100-000	1	1
1-7	PLATE: BRASS, RAYTRAC RECEPTACLE	EA	3025-000-001	1	1
1-8	RECEPTACLE, SUPPLY, 3 WIRE, 15 AMP, 120V	EA	3022-100-002	1	1
1-9	WIR, 20000, 2/0" x 10'0"	EA	3000-000-000	1	1
1-10	WIRE, W/0 1/2 STRAPPED, HARD STAMP, BARE	EA	3010-100-000	1	1
1-11	SWITCH, SAFETY, 1P, 6T 50 AMP, 200V, PLUG FREE	EA	3000-100-001	1	1
1-12	SLAMP, BRASS 100	EA	3023-100-000	1	1
1-13	SWITCH, SAFETY, 500 AMP, 600V, 1P	EA	3000-100-000	1	1
1-14	FREE, RECEPTACLE, 500 AMP, 600V	EA	3000-100-000	1	1
1-15	LINK, FREE, 500 AMP, 600V	EA	3000-100-001	1	1
	FREE FLOW, 50 AMP, 120V	EA	3000-100-000	1	1

DMV2CH01141

Title Block Elements

ITEM	DRAWING NUMBER W/O REV LEVEL	
MATERIAL		
DRAWN BY		DATE
DESIGN BY		DATE
CHECKED BY		DATE
RESPONSIBLE ENGINEER		DATE
GROUP LEADER		DATE
		DATE
		DATE
		DATE
ELECTRONIC FILE NAME		DATE

Figure 6.2 – Title Block Tolerancing



Makers Local 256: Makers Learn: Basic Blueprint Reading

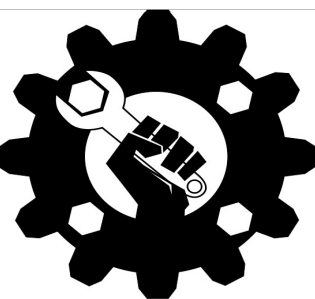
Title Block Information

CONTRACT NO. N/A		COMPANY NAME PCB DESIGN SCHOOL			
APPROVALS	DATE	TITLE FABRICATION DRAWING PCB DESIGN SAMPLE			
DRAWN CLARK HENRY	12/21/18				
CHECKED BRADY WHITE	12/21/18				
ISSUED MAL JORDAN	12/21/18	SIZE D	PSCN NO. 0425EPT	DWG. NO. PCB-D107	REV. A
		SCALE FULL		SHEET 1 OF 2	

2

1

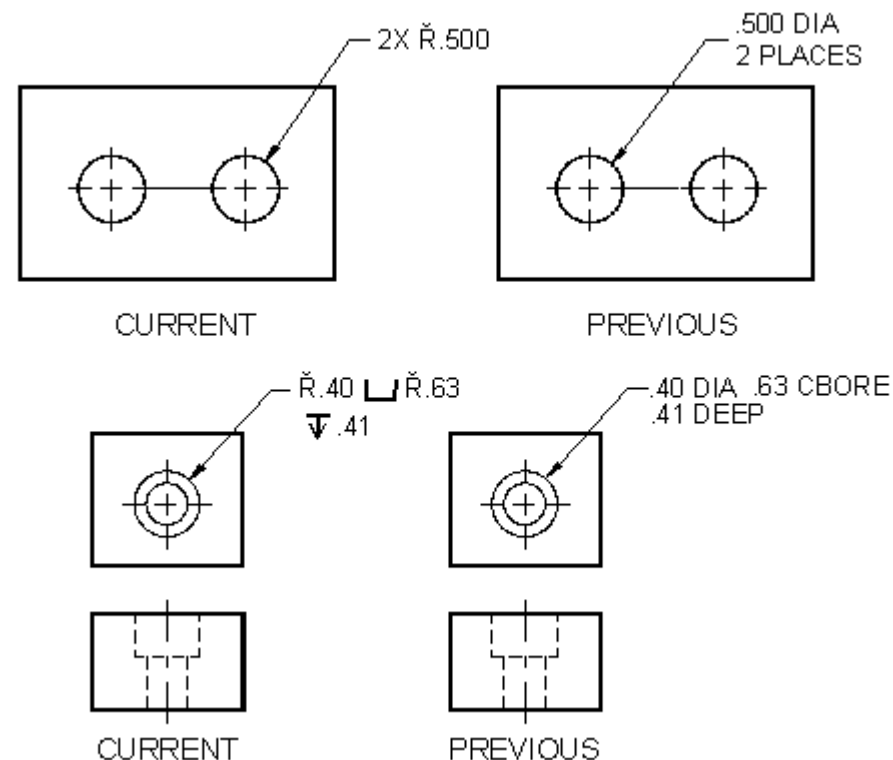
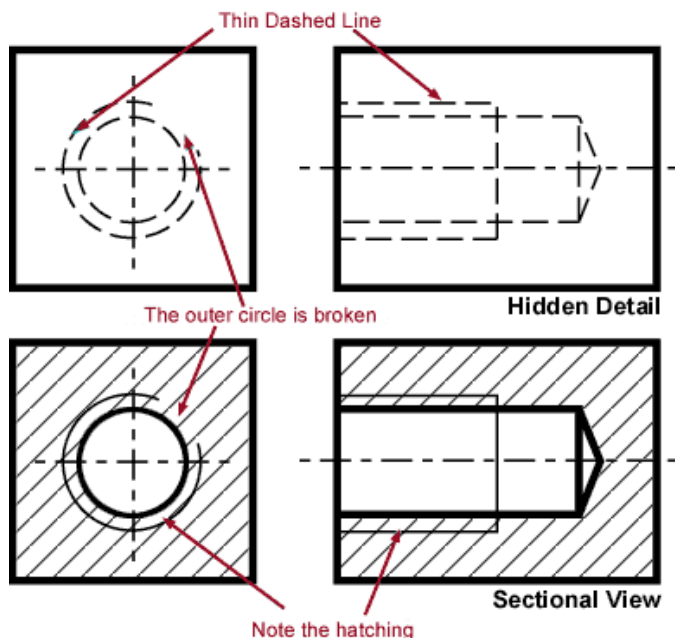
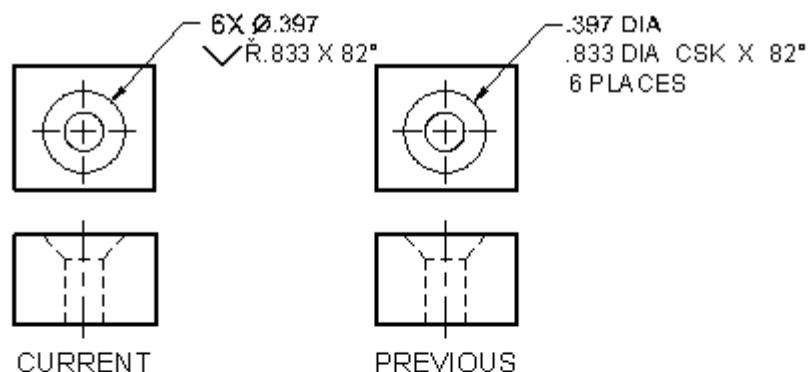
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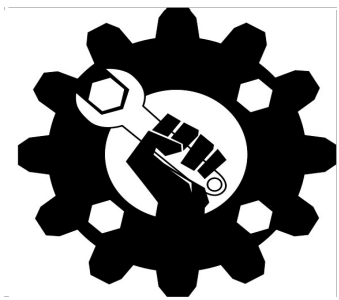


Makers Local 256:

Makers Learn: Basic Blueprint Reading

Hole Callouts

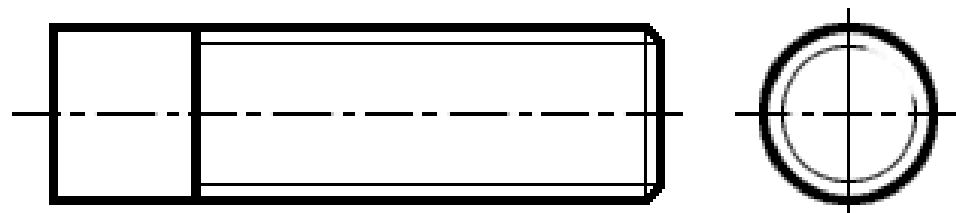
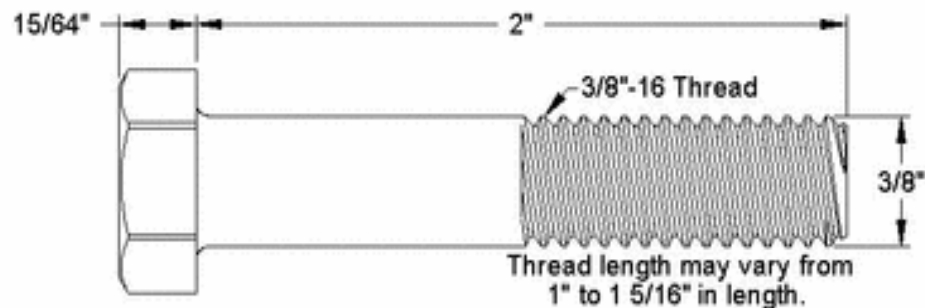
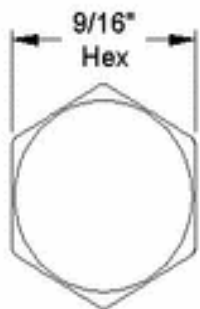


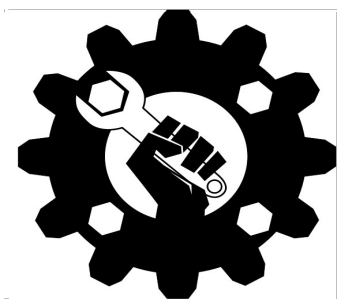


Makers Local 256:

Makers Learn: Basic Blueprint Reading

Screw Thread Callouts



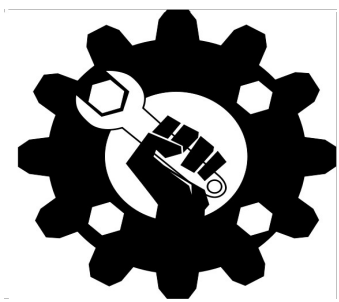


Makers Local 256:

Makers Learn: Basic Blueprint Reading

Bill Of Materials

BILL OF MATERIAL					
ITEM NO.	DESCRIPTION	UNT	ASSEMBLY OR FSN NO.	QUANTITIES	
				TROP	NORTH
1-1	LIGHTING SOCKET - SAFETY SW. NO. 002010	EA.	0010	1	1
1-2	POWER SW. 1000 - SAFETY SW. NO. 100101	EA.	0007	1	1
1-3	RECEPTACLE SW. - SAFETY SW. NO. 000000	EA.	0010	1	1
1-4	SW. RECEPTACLE W/CLAMP FOR NONMETALLIC SHEATH WIRE	EA.	0007-100-001	2	2
1-5	LAMP GLASS/NO. 000-000-0000	EA.	0000-000-000	10	10
1-6	PLUG/RECEPTACLE, 3 WIRE, 15 AMP, 120 V.	EA.	0000-000-000	10	10
1-7	PLATE: BRASS, W/PLATE RECEPTACLE	EA.	0000-000-000	1	1
1-8	RECEPTACLE, W/PLATE, 3 WIRE, 15 AMP, 120V.	EA.	0000-000-000	2	2
1-9	SW. 0000, 3/4" x 1/2"	EA.	0000-000-000	10	10
1-10	WIRE, NO. 12 STRANDED, BRASS BRASS, 0.001	LB	0000-000-000	10	10
1-11	SWITCH, SAFETY, 15, 15 00 AMP, 120 V, PLATE FUSE	EA.	0000-000-000	2	2
1-12	CLAMP, BRASS, 000	EA.	0000-000-000	10	10
1-13	SWITCH, SAFETY, 000 AMP, 000V, 15	EA.	0000-000-000	1	1
1-14	FUSE, RECEPTACLE, 000 AMP, 000 V	EA.	0000-000-000	1	1
1-15	WIRE, FUSE, 000 AMP, 000 V	EA.	0000-000-000	1	1
	FUSE PLUG, 00 AMP, 120V	EA.	0000-000-000	10	10

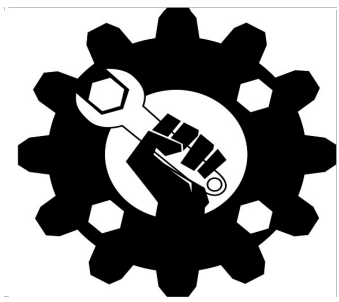


Makers Local 256:

Makers Learn: Basic Blueprint Reading

Title Block With Standard Tolerances

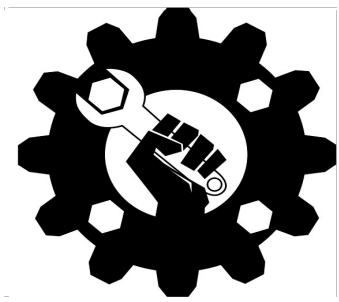
ITEM	DRAWING NUMBER W/O REV LEVEL											
MATERIAL	DRAWN BY	DATE										
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES TOLERANCES: <table border="0"> <tr> <td><u>DECIMALS</u></td> <td><u>ANGULAR</u></td> </tr> <tr> <td>.X $\pm .1$</td> <td>$\pm .25^\circ$</td> </tr> <tr> <td>.XX $\pm .01$</td> <td></td> </tr> <tr> <td>.XXX $\pm .005$</td> <td></td> </tr> <tr> <td colspan="2">SURFACE ROUGHNESS 125/$\sqrt{}$</td> </tr> </table>	<u>DECIMALS</u>	<u>ANGULAR</u>	.X $\pm .1$	$\pm .25^\circ$.XX $\pm .01$.XXX $\pm .005$		SURFACE ROUGHNESS 125/ $\sqrt{}$		DESIGN BY	DATE
	<u>DECIMALS</u>	<u>ANGULAR</u>										
	.X $\pm .1$	$\pm .25^\circ$										
	.XX $\pm .01$											
	.XXX $\pm .005$											
SURFACE ROUGHNESS 125/ $\sqrt{}$												
CHECKED BY	DATE											
RESPONSIBLE ENGINEER	DATE											
GROUP LEADER	DATE											
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX. SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1 DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5	DATE											
ELECTRONIC FILE NAME	DATE											



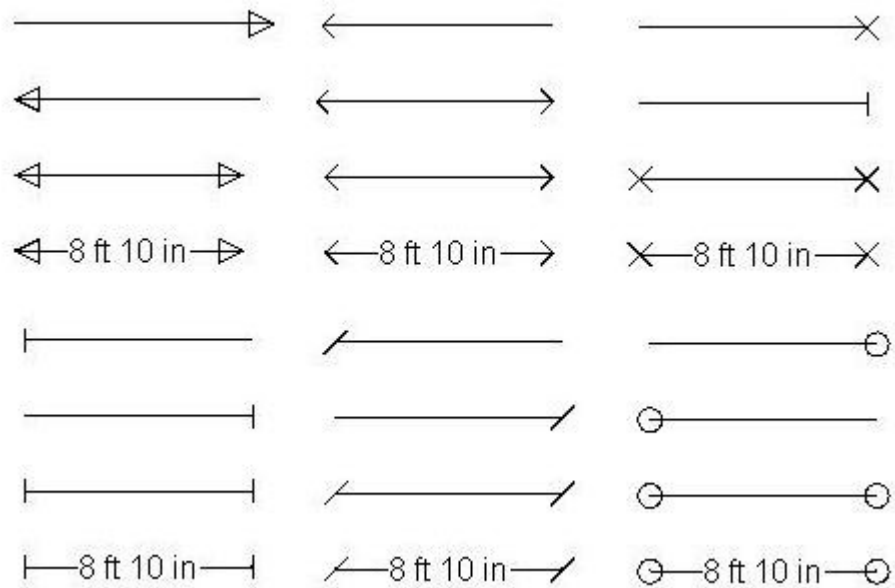
Makers Local 256:

Makers Learn: Basic Blueprint Reading

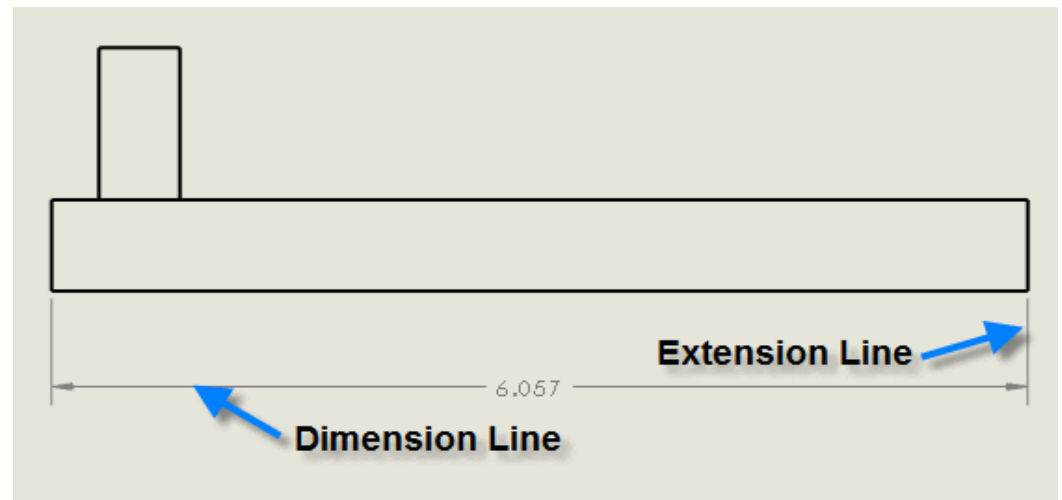
Dimensioning

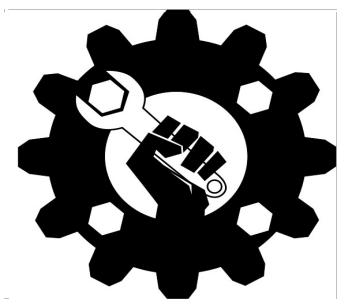


Makers Local 256: Makers Learn: Basic Blueprint Reading



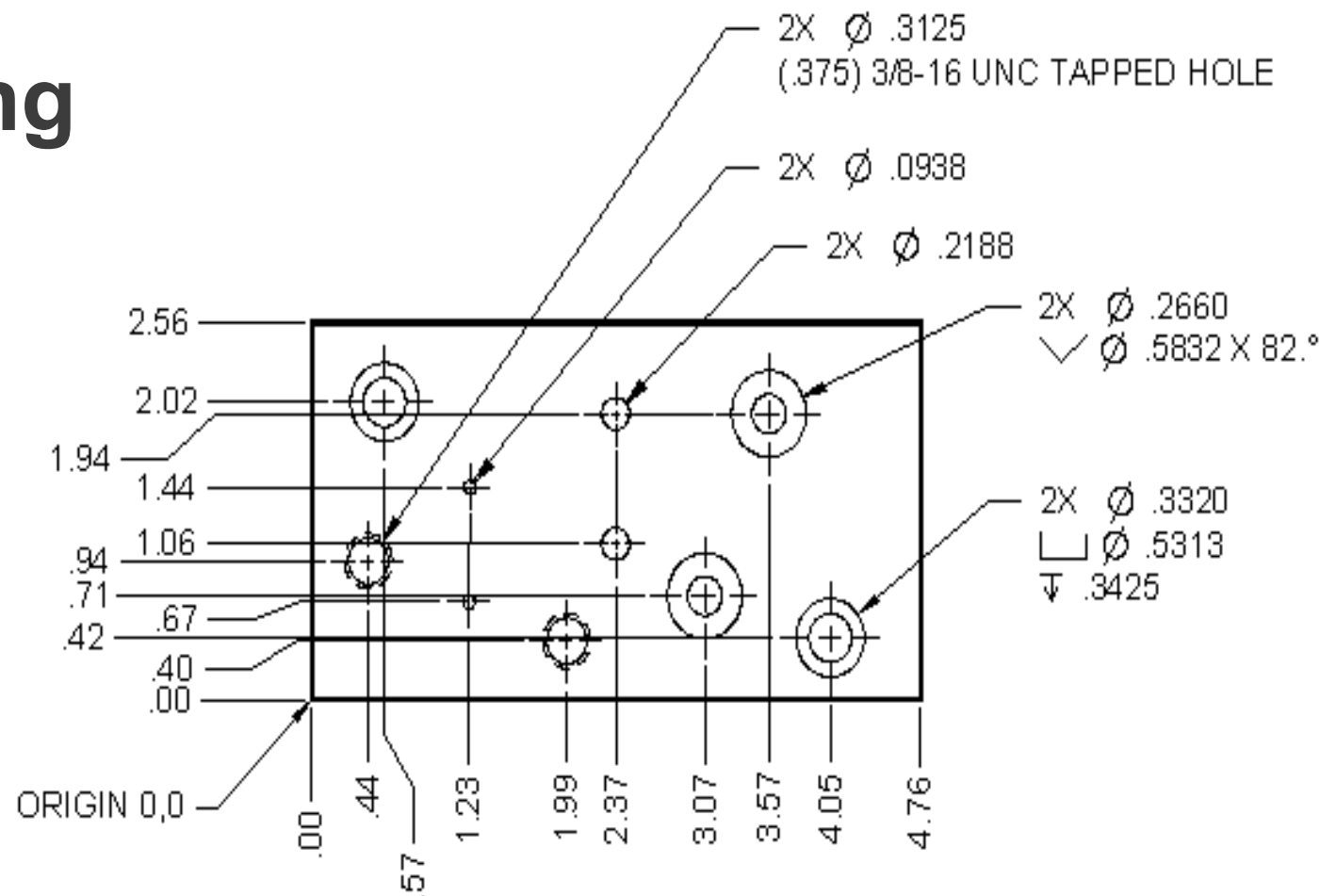
Dimension Line Styles

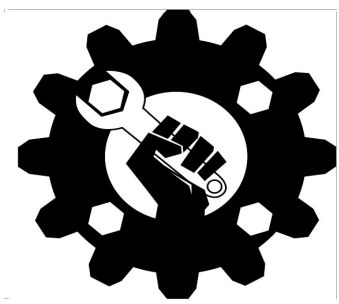




Makers Local 256: Makers Learn: Basic Blueprint Reading

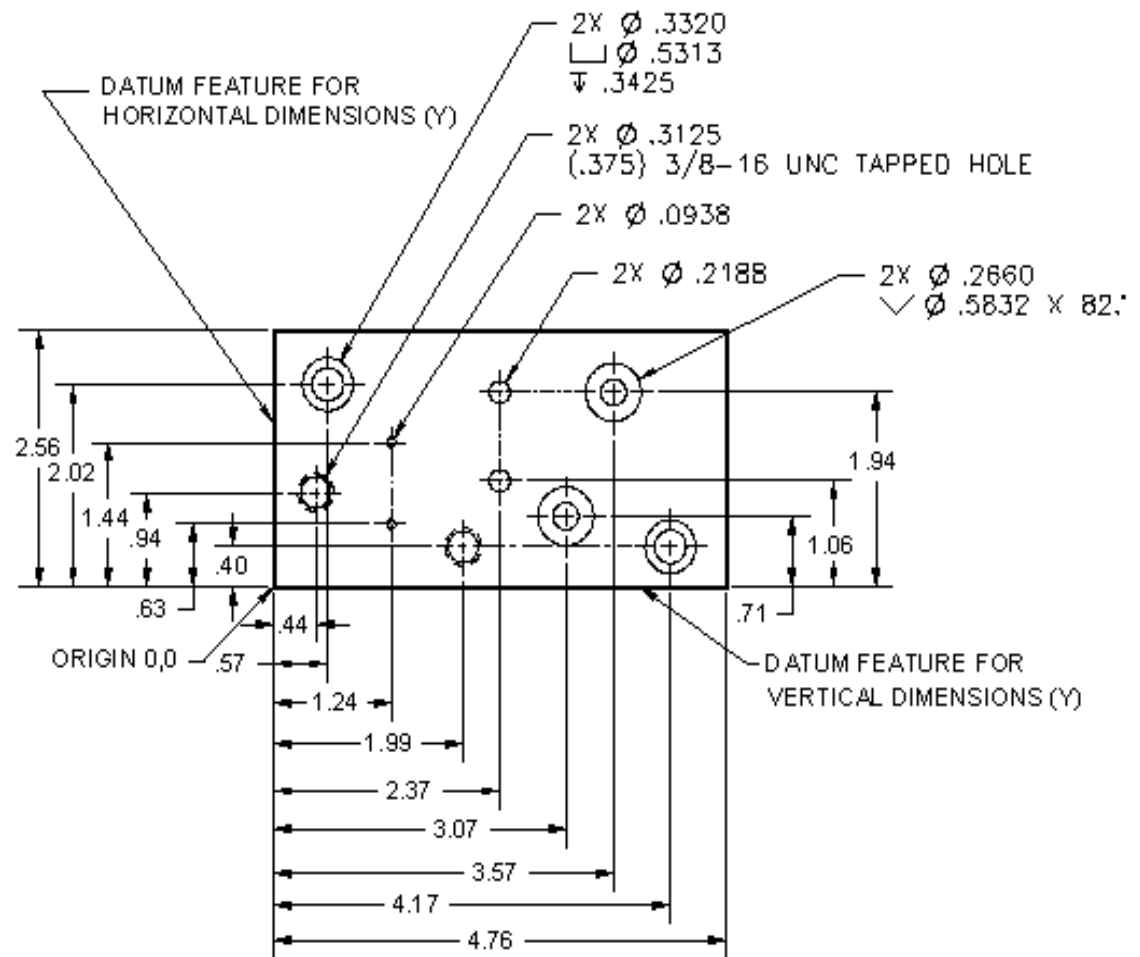
Ordinate Dimensioning

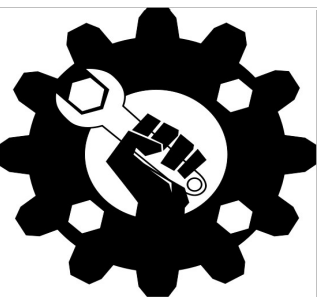




Makers Local 256: Makers Learn: Basic Blueprint Reading

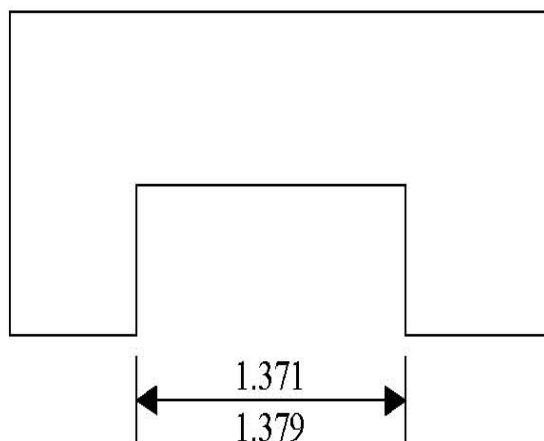
Ordinate Dimensioning With Stacked Dimensions



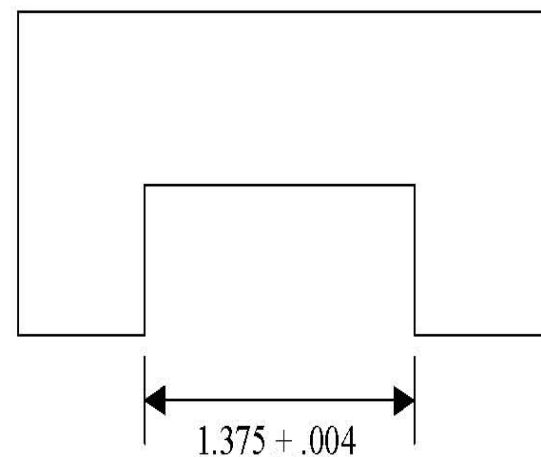


Makers Local 256: Makers Learn: Basic Blueprint Reading

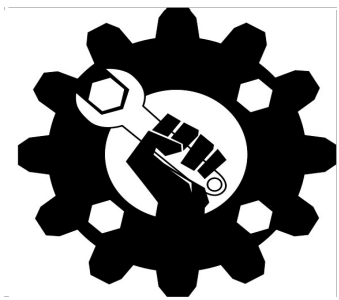
Dimensional Tolerances



Limit Dimensioning



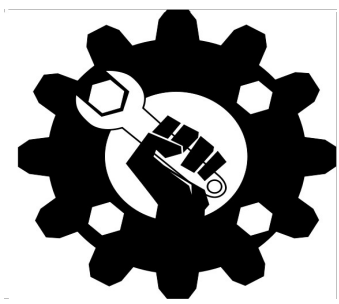
Plus & Minus Tolerancing



Makers Local 256:

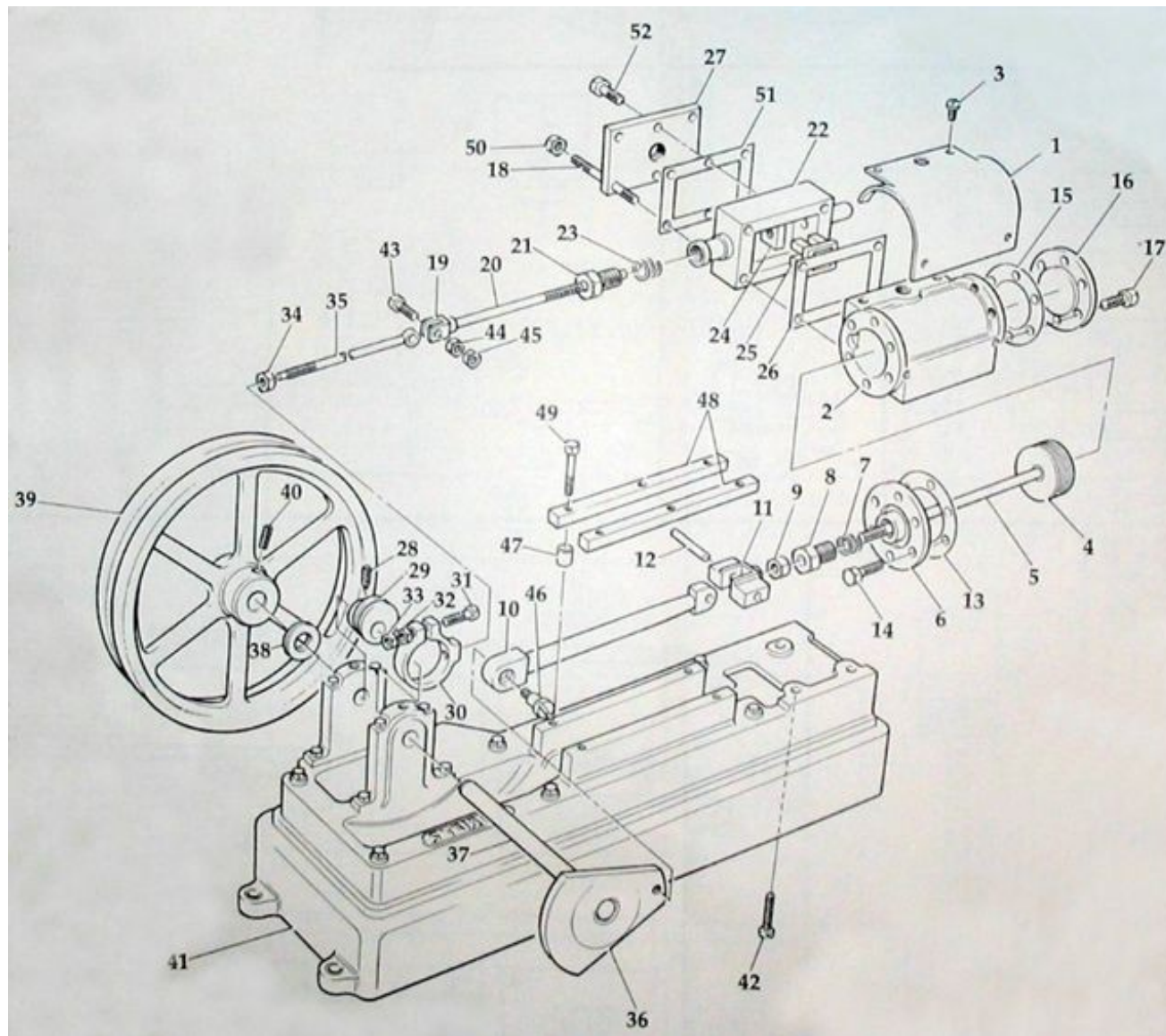
Makers Learn: Basic Blueprint Reading

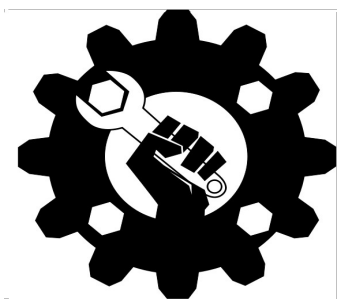
Example Prints



Makers Local 256:

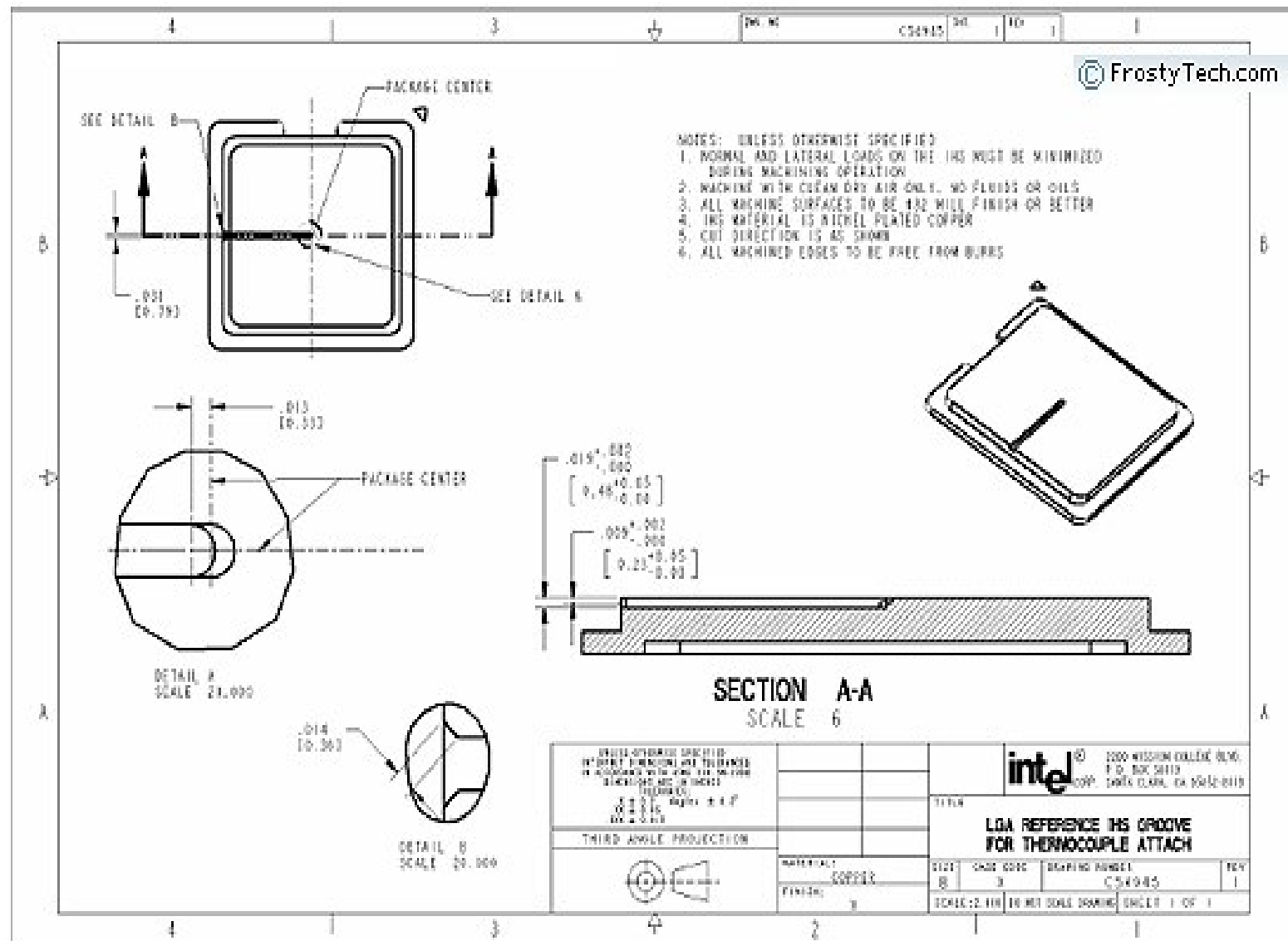
Makers Learn: Basic Blueprint Reading

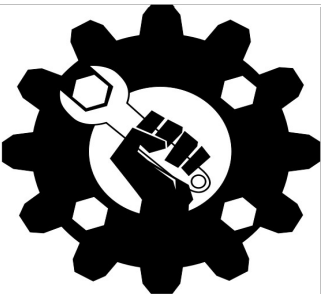




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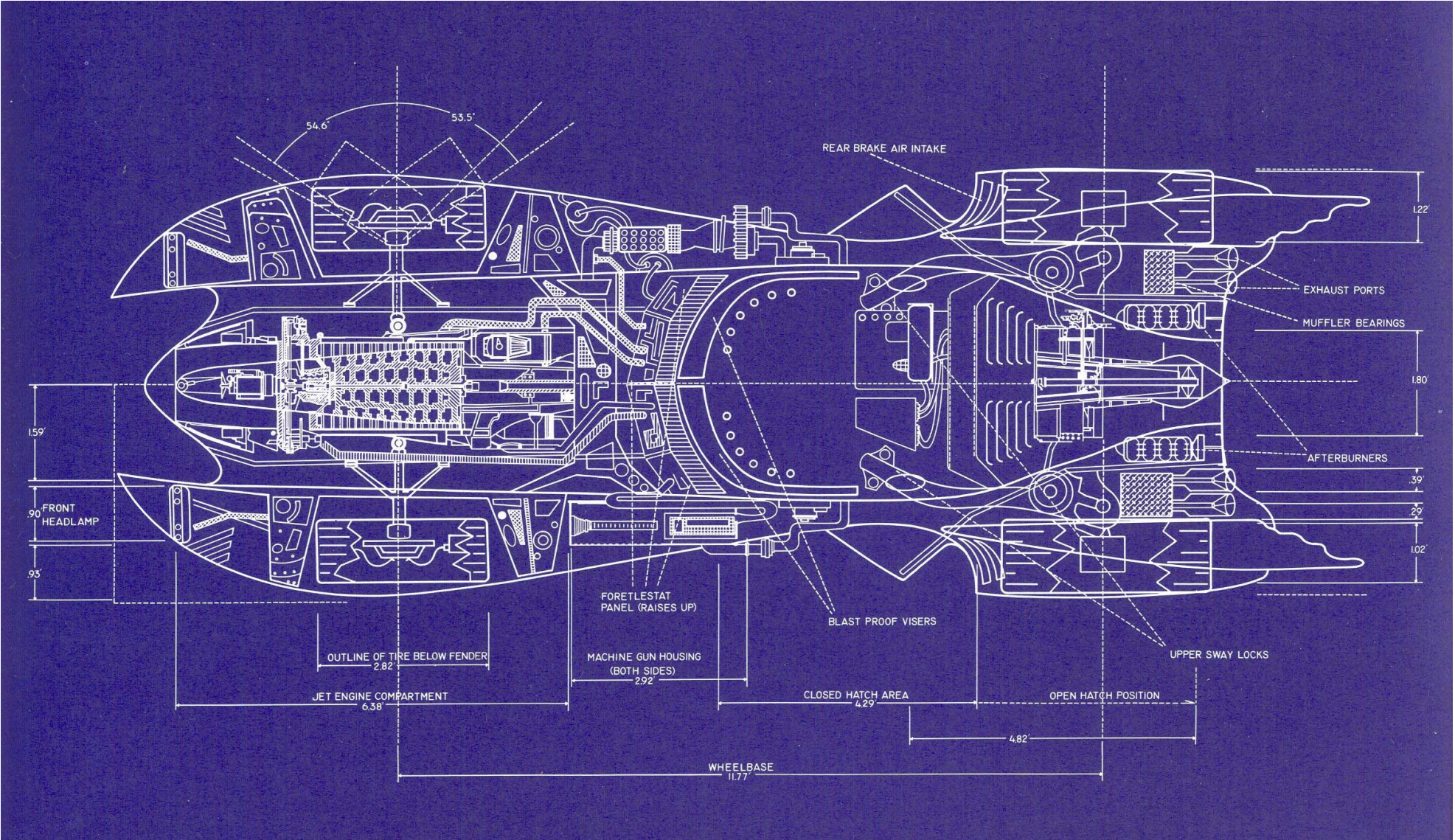
Makers Learn: Basic Blueprint Reading

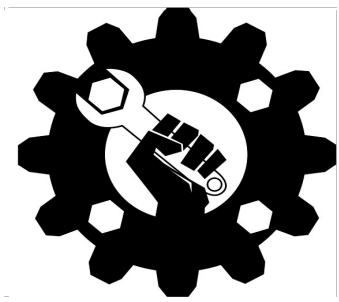




Makers Local 256:

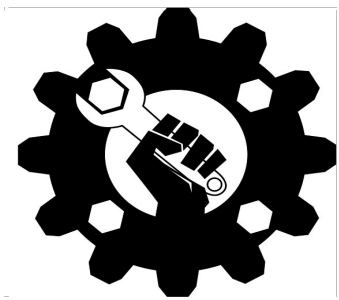
Makers Learn: Basic Blueprint Reading





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Questions, Comments, Rants????



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For more info about Makers Local 256, please visit:
<https://256.makerslocal.org/>

